Abstract—Nutritional status is a vital indicator of child health and development, with malnutrition remaining a global concern. In 2022, WHO reported around 149 million children under five are affected by stunting, 45 million are experiencing wasting, and 37 million are categorized as overweight or obese. In Kalijambe, although anthropometric data of 3,130 children is available, its potential for predictive analysis has not been fully explored. This study applies two machine learning algorithms, Na¨ıve Bayes and SVM, to classify nutritional status. Evaluation of the models was carried out using accuracy, recall, precision, F1-score, and a confusion matrix. SVM consistently outperforms Na¨ıve Bayes, achieving the highest accuracy of 93.4% in the Weight/Age category, with F1-scores above 0.80 across all classifications. In contrast, Na¨ıve Bayes performs poorly on imbalanced data, with its lowest accuracy of 43% in the Weight/Height category. These findings highlight SVM's robustness in handling non-linear patterns and imbalanced datasets, making it more suitable for nutritional status prediction. This research contributes to early detection efforts for malnutrition and supports data-driven decision-making in public health. Future studies may enhance performance further through advanced balancing techniques and deep learning approaches.

Index Terms—toddler nutritional status, na¨ıve bayes, support vector machine (svm), anthropometric data.